Please check the examination details below before entering your candidate information

Candidate surname	Other names

Centre Number | Learner Registration Number

Pearson BTEC Level 1/Level 2 Tech Award

Sample assessment materials for first teaching September 2022

Time 1 hour 30 minutes

Paper reference **BCB03**

Construction and the Built Environment

COMPONENT 1: Construction Technology
Additional SAM

You must have:
A ruler, HB or 2B pencil to sketch, eraser

Total Marks

Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and learner registration number.
- Answer **all** questions.
- Answer the questions in the spaces provided
  – *there may be more space than you need.*

Information

- The total mark for this paper is 60.
- The marks for **each** question are shown in brackets
  – *use this as a guide as to how much time to spend on each question.*

Advice

- Read each question carefully before you start to answer it.
- Try to answer every question.
- Check your answers if you have time at the end.

Turn over ▶

S76712A

©2022 Pearson Education Ltd.
1/1/1

S 7 6 7 1 2 A 0 1 1 2

Pearson

Answer ALL questions. Write your answers in the spaces provided.

Some questions must be answered with a cross in a box ☒. If you change your mind about an answer, put a line through the box ☒ and then mark your new answer with a cross ☒.

1 Which **one** would be used to reduce the effect of a fire in a building?

☒ **A** Use of ventilation ducts

☒ **B** Sprinkler systems

☒ **C** Use of acoustic panels

☒ **D** Double glazing

(Total for Question 1 = 1 mark)

2 Identify **two** sustainable materials used in construction projects.

☒ **A** Straw

☒ **B** Steel

☒ **C** Concrete

☒ **D** Glass

☒ **E** Timber

(Total for Question 2 = 2 marks)

DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA

3 Materials are selected to deliver different performance requirements.

Draw a line to match each material to its performance requirement.

Each material links to only one performance requirement.

Material	Performance requirement
Acoustic panels	Strength
Intumescent paint	Fire resistance
	Sustainability
	Sound insulation
	Weather resistance

(Total for Question 3 = 2 marks)

4 State **two** reasons for using thermal insulation or draughtproofing in a building.

1 .....

2 .....

(Total for Question 4 = 2 marks)

5 State **two** types of residential construction.

1 .....

2 .....

(Total for Question 5 = 2 marks)

DO NOT WRITE IN THIS AREA DO NOT WRITE IN THIS AREA DO NOT WRITE IN THIS AREA DO NOT WRITE IN THIS AREA

6 State **two** types of earthwork support which could be used when a trench is excavated on a construction site.

1 .....

2 .....

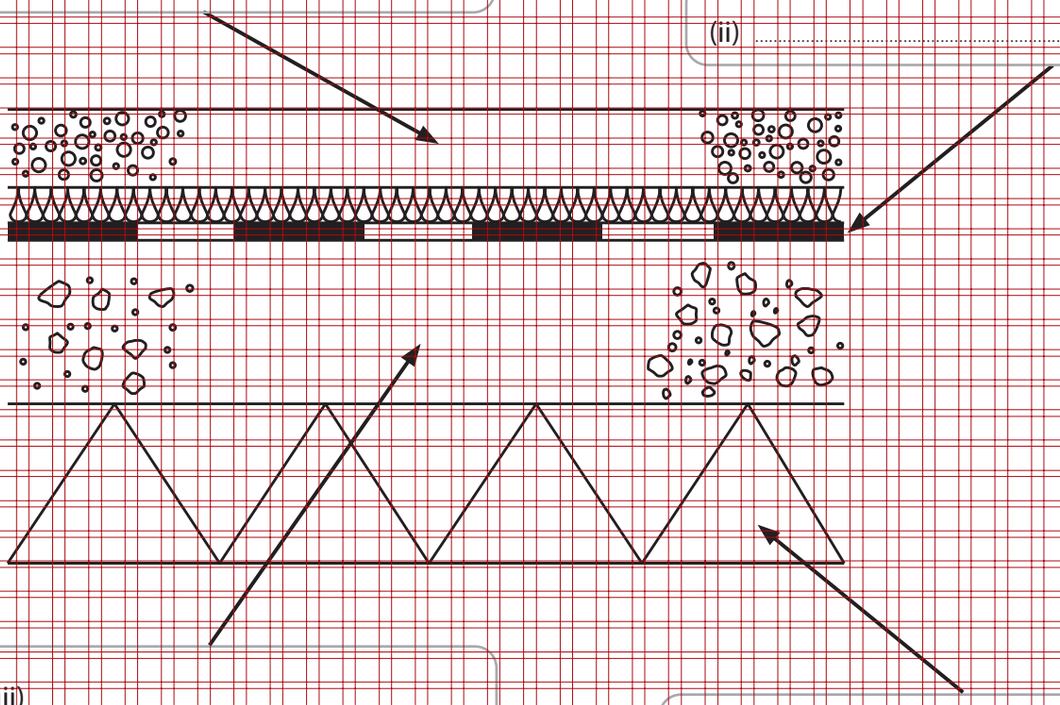
(Total for Question 6 = 2 marks)

7 Diagram 1 shows a section through a solid ground floor.

Label the four components/materials shown in Diagram 1.

(i) .....

(ii) .....



(iii) .....

(iv) .....

Diagram 1

(Total for Question 7 = 4 marks)

DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA

8 Draw and label a cross-section through an external masonry cavity wall.

Your drawing should identify each of the materials/components used and the correct placement of each material/component.

(Total for Question 8 = 4 marks)

DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA

9 Explain **one** advantage of a pitched roof construction form.

(Total for Question 9 = 2 marks)

10 Explain **two** disadvantages of vertical tile hanging for the external cladding on a building.

1

2

(Total for Question 10 = 4 marks)

DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA

11 A greenfield site is being considered for a new housing development.

The site is located on the outskirts of a city and includes a small forest area and lake.

Discuss the factors that the developer should consider before deciding to build on the greenfield site.

(Total for Question 11 = 6 marks)

DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA

12 State **one** legal requirement that should be completed during the desk-based preconstruction phase of a construction project.

.....

.....

(Total for Question 12 = 1 mark)

13 A strip foundation is used to support a building.

Name **two** other types of foundation used to support a low-rise building.

1 .....

2 .....

(Total for Question 13 = 2 marks)

14 Identify **two** types of transportation system.

- ☒ **A** Cinemas
- ☒ **B** Tramways
- ☒ **C** Sea defences
- ☒ **D** Railways
- ☒ **E** Embankments

(Total for Question 14 = 2 marks)

15 State **two** types of pointing used in facing brickwork.

1 .....

2 .....

(Total for Question 15 = 2 marks)

16 Gabions are a cost-effective solution for coastal defences.

Explain **one** advantage of the use of gabions for a coastal defence scheme.

.....

.....

(Total for Question 16 = 2 marks)

DO NOT WRITE IN THIS AREA DO NOT WRITE IN THIS AREA DO NOT WRITE IN THIS AREA DO NOT WRITE IN THIS AREA DO NOT WRITE IN THIS AREA DO NOT WRITE IN THIS AREA

17 Explain **two** reasons why facing bricks are suitable for a new building development.

1 .....

.....

.....

.....

2 .....

.....

.....

.....

(Total for Question 17 = 4 marks)

18 An architect is designing a house and is considering two types of floor.

Explain **two** advantages of using a beam and block floor instead of a solid concrete floor.

1 .....

.....

.....

.....

2 .....

.....

.....

.....

(Total for Question 18 = 4 marks)

DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA

19 Explain **one** reason why a strip foundation is a popular form of construction for building projects.

(Total for Question 19 = 3 marks)

20 Explain **one** way a cavity tray can reduce dampness on the internal skin of a cavity wall.

(Total for Question 20 = 3 marks)

DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA

21 A developer has plans to open 20 'drive-thru' coffee and cake shops next door to petrol filling stations. The buildings will be of a modular construction form.

Discuss the suitability of a modular construction form.

(Total for Question 21 = 6 marks)

TOTAL FOR PAPER = 60 MARKS

DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

BLANK PAGE